

### **Abstract**

A method and a structure of a diode are provided. The diode is used in an electrostatic discharge protection circuit using TFT (Thin Film Transistor) fabrication technology. A semiconductor layer is formed on a substrate. A first region of a first carrier concentration is formed in the semiconductor layer. A second region of a second carrier concentration is formed in the semiconductor layer. An insulator is formed on the semiconductor layer. The insulator layer is etched to form at least a contact window. The contact window exposes a portion of an upper surface of the semiconductor layer. A metal layer is formed on the insulator layer. The metal layer fills up the contact window to contact the semiconductor layer.